Geyssel - Building

mixed use

lightguiding glass

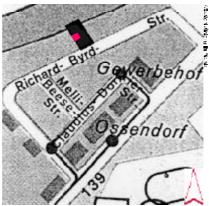
building

The Geyssel Building is situated in the outskirts of Cologne and accommodates offices, computer rooms for CAD and a large machine hall for assembling and producing machines.

daylight strategy

limited budget reduced development of a special daylighting concept to the ground floor only. A sunlight guiding clerestory redirects light to ceiling deflectors that distribute the light within the office. Part of this system, developed by ILB, is a layer of acrylic sticks integrated in the cavity of the glass. Placed parallel to the window pane and extending horizontally, they sufficiently illuminate the room when the lower window shades are closed, without causing glare or overheating. Since this layer occupies only a small area of the window it does not affect the performance of daylight strategy on cloudy days.

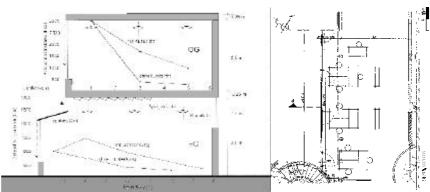
Cologne, Germany 51°N, 7°E predominantly cloudy



The Geyssel building is situated in an area with industrial land use.



The lightguiding elements are installed in the upper window of the first floor, other windows are equipped with conventional blinds.



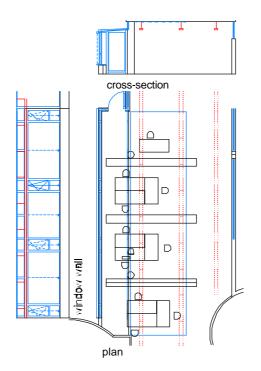
Left side: Cross-section including light levels with lightguiding system. Right side: Floorplan.



Office in the ground floor, the strip windows under the ceiling contain lightguiding glass to reflect sunlight to the mirrors under the ceiling. This system enhances the daylight penetration on sunny days significantly.



The lightguiding glass appears as a conventional element when seen from outside.



building data size 3 980 m² number of stories architect E. Schneider-Wessling daylight consultant ILB, FH Cologne year of completion of fice room daylight strategy unilateral, sidelighting dimensions 18 m / 7,5 m / 3 m (depth/width/height) 135 m² room area black, 5% floor wall wood, 40% ceiling concrete, 30% reflective metal, 90% table gray S-W facing window double clear glazing upper window light-guiding glass lamp types fluorescent lamps installed power density 19 W/m²

control strategy daylight responsive automatic dimming

system

SW-facade 240° orientation 26,5 m² opening index 0,49 daylighting view outside ventilation operable shading redirection ightguiding glass Brown scroon function systems sun shading glare protection redirection inside window pane outside ocation movable fixed